Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Georgia Gulf Lake Charles, LLC
VCM Plant
Westlake, Calcasieu Parish, Louisiana
Agency Interest Number: 4013
Activity Number: PER20080004
Proposed Permit Number: 0520-00012-V1

I. APPLICANT

Company:
Georgia Gulf Lake Charles, LLC
1600 VCM Plant Road
Westlake, Louisiana 70669

Facility:
VCM Plant
1600 VCM Plant Road
Westlake, Louisiana 70669
Approximate UTM coordinates are 472.648 kilometers East and 3,346.493 kilometers North in Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

The VCM Plant produces VCM by thermally cracking the intermediate ethylene dichloride (EDC). EDC is produced both in a direct chlorination reaction process and an oxychlorination reaction process. The direct chlorination and oxychlorination EDC streams are combined and purified in aqueous wash and distillation process.

The purified EDC is thermally cracked to VCM and hydrogen chloride in gas fired cracking furnaces. The VCM, hydrogen chloride, and the uncracked EDC are separated by distillation. The hydrogen chloride gas is reacted with ethylene gas and oxygen over a solid catalyst to produce more EDC. This EDC, along with the uncracked EDC from the cracking furnaces, is recycled to EDC purification. The VCM is purified and dried prior to on-site storage.

The chlorine and ethylene feedstocks are received by pipeline. The VCM product is shipped by railcar. Heavy ends byproduct is shipped by trucks.

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VCM Plant is a designated Part 70 source. It is currently operating under the Permit No. 0520-00012-V0, issued October 27, 2005.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application dated October 29, 2008 was submitted requesting a Part 70 operating permit modification for the VCM Plant.

Project

With this permit modification, Georgia Gulf Lake Charles, LLC proposes the following changes to the VCM Plant:

- Add 2 generators, 3 air compressors, and 1 stormwater collection tank to the VCM Plant.
- Incorporate 3 insignificant activities to the permit.
- Make administrative changes for several emission point sources (descriptions, emission rates, etc.).

No changes on production process or production capacity are proposed.

Proposed Permit

Permit No. 0520-00012-V1 will be a modification to Part 70 Operating Permit No. 0520-00012-V0 for the VCM Plant.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	16.06	16.13	+ 0.07
SO_2	2.28	3.28	+ 1.00
NO_X	106.86	110.50	+ 3.64
CO	134.88	135.75	+ 0.87
VOC	54.87	55.11	+ 0.24

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the

applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Streamlined Equipment Leak Monitoring Program

For the VCM Plant, fugitive emissions are subject to the requirements of 40 CFR 63 Subpart H, 40 CFR 61 Subparts F and V, 40 CFR 60 Subpart VV, LAC 33:III.2122, and LAC 33:III.5109. Among these regulations, 40 CFR 63 Subpart H is the overall most stringent program. Therefore, fugitive emissions shall be monitored as required by this program (40 CFR 63 Subpart H).

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
VCM Plant	40 CFR 63 Subpart H – HON	≥ 5% VOHAP	40 CFR 63 Subpart H – HON
	40 CFR 61 Subpart F – NESHAP for Vinyl Chloride	≥ 10% VCM	
	40 CFR 61 Subpart V – NESHAP for Equipment Leaks	≥ 10% VCM	
	40 CFR 60 Subparts VV – NSPS for Equipment Leaks of VOC in SOCMI or Refineries	≥ 10% VOC	
	LAC 33:III.2122 – Fugitive Emission Control for Ozone Nonattainment Areas and Specified Parish	≥ 10% VOC	
	LAC 33:III.5109 – Louisiana MACT Determination for Non-HON Sources	≥ 5% VOTAP	

MACT Requirements

This facility is subject to the requirements of 40 CFR Part 63, Subparts G, H, and ZZZZ. Detailed requirements are listed in the Specific Requirements Section of the proposed permit.

Air Quality Analysis

Emissions associated with the facility were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping

requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

Permit shield is not requested.

VI. PERIODIC MONITORING

All monitoring requirements are presented in the Specific Requirements section of the proposed permit.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

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Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.